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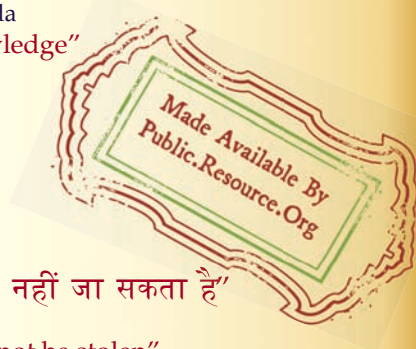
IS 4935 (1968): Synthetic Syrups [FAD 10: Processed Fruits and Vegetable Products]



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IS : 4935 - 1968

Indian Standard
**SPECIFICATION FOR
SYNTHETIC SYRUPS**
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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Indian Standard

SPECIFICATION FOR SYNTHETIC SYRUPS

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**AMENDMENT NO. 1 MAY 1996
TO
IS 4935 : 1968 SPECIFICATION FOR SYNTHETIC
SYRUPS**

(*Page 3, clause 0.4*) — Insert the following new clause after 0.4 and renumber the subsequent clause:

'0.5 A scheme for labelling environment friendly products known as ECO-Mark has been introduced at the instance of the Ministry of Environment and Forests (MEF), Government of India. The ECO-Mark shall be administered by the Bureau of Indian Standards (BIS) under the *BIS Act, 1986* as per the Resolution No. 71 dated 20 February 1991 and Resolution No. 425 dated 28 October 1992 published in the Gazette of the Government of India. For a product to be eligible for marking with the ECO-Mark it shall also carry the Standard Mark of BIS for quality besides meeting additional environment friendly (EF) requirements. The environment friendly requirements for synthetic syrups are, therefore, included through Amendment No. 1 to this standard.

This amendment is based on the Gazette Notification No. 624 (E) dated 6 September 1995 for Labelling Beverages, Infant Foods, Processed Fruits and Vegetable Products as environment friendly, published in the Gazette of the Government of India.'

(*Page 4, clause 3.4.3*) — Insert the following new clauses after 3.4.3:

"3.5 Additional Requirements for ECO-Mark

3.5.1 General Requirements

3.5.1.1 The product shall conform to the requirements prescribed under 3.1 to 3.4.3.

3.5.1.2 The manufacturer shall produce the consent clearance as per the provisions of *Water (PCP) Act, 1974*, *Water (PCP) Cess Act, 1977* and *Air (PCP) Act, 1981* along with the authorization if required under *Environment (Protection) Act, 1986* and the Rules made thereunder to the Bureau of Indian Standards while applying for the ECO-Mark and the product shall also be in accordance with the *Prevention of Food Adulteration Act, 1954* and the Rules made thereunder. Additionally, FPO 1955 (Fruit Product Order) framed under *Essential Commodities Act, 1955*, *Standards of Weights and Measures Act, 1977* and other laws and regulations wherever applicable has to be complied with.

Amend No. 1 to IS 4935 : 1968

3.5.1.3 The product/packaging may also display in brief the criteria based on which the product has been labelled environment friendly.

3.5.1.4 The material used for product packing shall be recyclable or biodegradable.

3.5.1.5 The date of manufacture and date of expiry shall be declared on the product/package by the manufacturer.

3.5.1.6 The product shall be microbiologically safe when tested as per IS 5403 : 1969 'Method for yeast and mould count of foodstuffs' and IS 5887 (Part 5) : 1976 'Methods for detection of bacteria responsible for food poisoning : Part 5 Isolation, identification and enumeration of *Vibrio Cholerae* and *Vibrio Parahaemolyticus* (first revision)' and shall be free from bacterial and fungal toxins.

3.5.1.7 The pesticide residues, if any in the product shall not exceed the limit as prescribed in *PFA Act*, 1954 and the Rules made thereunder.

3.5.1.8 The product/package or leaflet accompanying it may display instructions of proper use, storage and transport (including refrigeration temperature compliance) so as to maximize the product performance, safety and minimize wastage.

3.5.2 Specific Requirements

3.5.2.1 The product shall not contain any of the heavy metal contaminants in excess of the quantities prescribed in Table 1.'

(Page 5, clause 4.2.1) — Insert the following new clause after 4.2.1:

'4.3 ECO-Mark

The product may also be marked with the ECO-Mark, the details of which may be obtained from the Bureau of Indian Standards.'

Indian Standard

SPECIFICATION FOR SYNTHETIC SYRUPS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 18 December 1968, after the draft finalized by the Fruits and Vegetables Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 Synthetic syrups also commonly known as *SHERBATS* occupy an important place among the beverages manufactured in the country. It is, however, necessary to ensure the quality of the products if the demand is to be maintained and further developed. It is, therefore, necessary to have strict quality control based on specifications.

0.3 In the preparation of this standard due consideration has been given to the *Prevention of Food Adulteration Act, 1954* and the Rules framed thereunder and Fruits Products Order, 1955. However, this standard is subject to the restrictions imposed under these, wherever applicable.

0.4 Synthetic syrups are prepared with or without addition of citric acid to the sugar syrup and flavouring essences. The syrups may also contain added permissible synthetic colours and preservatives.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS: 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for synthetic syrups.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definition shall apply.

2.1 Absence of Defects — Freedom from extraneous matter like grit, dirt, crystallized sugar, and an oily layer at the surface.

*Rules for rounding off numerical values (*revised*).

3. REQUIREMENTS

3.1 Preparation — Synthetic syrups shall be prepared only from sucrose, invert sugar, dextrose, liquid glucose, water, harmless herbs, dry fruits, flower petals and essences. In the preparation of synthetic syrups artificial sweetening agents shall not be used.

3.2 Additives — The only additives that shall be used in synthetic syrups are citric acid and permitted colours.

3.3 Preservatives — The only preservatives that may be used in synthetic syrups are sulphur dioxide or any other suitable sulphite or benzoic acid or its water soluble salts. The sulphur dioxide (SO_2) content shall not exceed 350 parts per million when tested according to the method prescribed in Appendix B of IS: 4624-1968* or benzoic acid content shall not exceed 600 parts per million when tested according to the method prescribed in Appendix B of IS: 3500-1966†.

3.4 Requirements of the Finished Product

3.4.1 The total soluble solids content in synthetic syrups shall be not less than 65 percent by weight when tested according to the method prescribed in Appendix B of IS: 3882-1966‡.

3.4.2 Synthetic syrups shall be clear, transparent, free from scum, residue or suspended particles, shall be of a uniform colour, shall possess a pleasant taste and flavour truly characteristic of the flavouring material used and shall score not less than 80 points. There shall be no crystallization of sugar. Maximum and minimum number of points scored by different factors shall be as follows:

<i>Factor</i>	<i>Maximum</i>	<i>Minimum</i>
Colour	25	20
Taste and flavour	50	40
Absence of defects	25	20

Scoring shall be done according to the method prescribed in Appendix A.

3.4.3 Synthetic syrups shall not contain poisonous metals in excess of the quantities specified in Table I.

4. PACKING AND MARKING

4.1 Packing — Synthetic syrups shall be packed in suitable containers preferably glass bottles.

*Specification for dehydrated peas. (Since revised).

†Specification for mango chutney.

‡Specification for tomato ketchup.

TABLE 1 LIMITS FOR POISONOUS METALS IN SYNTHETIC SYRUPS

(Clause 3.4.3)

SL No.	CHARACTERISTIC	REQUIREMENT	METHODS OF TEST, REF TO CL No. OF IS: 2860-1964*
(1)	(2)	(3)	(4)
i)	Arsenic (as As), ppm, <i>Max</i>	1.1	13
ii)	Lead (as Pb), ppm, <i>Max</i>	2.5	14
iii)	Copper (as Cu), ppm, <i>Max</i>	30	15
iv)	Zinc (as Zn), ppm, <i>Max</i>	19	16
v)	Tin (as Sn), ppm, <i>Max</i>	250	17

*Methods of sampling and test for processed fruits and vegetables.

4.2 Marking— Each container shall be marked or labelled with the following particulars:

- a) Name of the material with the brand name, if any (*see* Note);

NOTE — The container of synthetic syrups will not bear any label which will lead the consumer into believing that it is genuine fruit product. In addition the label will have the word 'SYNTHETIC' distinctly and clearly displayed on it. Rose, KHUS, KEWRA, SANDAL and other such syrups may not be declared as 'SYNTHETIC' but shall not bear picture of fruits on the label.

- b) Name and address of the manufacturer;
 c) Net weight of the contents in grams;
 d) Date of manufacture or code number indicating the date of manufacture;
 e) List of additives, if used; and
 f) Manufacturer's licence number.

4.2.1 The containers may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

5. SAMPLING

5.1 The method of drawing representative samples of the material and the criteria for conformity shall be as prescribed in IS: 2860-1964*.

6. TESTS

6.1 Tests shall be carried out as prescribed in relevant appendices and clauses specified in 3.3, 3.4 and col 4 of Table 1.

*Methods of sampling and test for processed fruits and vegetables.

APPENDIX A

(Clause 3.4.2)

METHOD OF SCORING FOR SYNTHETIC SYRUPS

A-1. APPARATUS

A-1.1 White Porcelain Bowls — big enough to hold the contents of the containers under examination.

A-1.2 Stainless Steel Spoons

A-2. PROCEDURE

A-2.1 Panel of Judges — For awarding scores to synthetic syrups they shall be judged by a panel of 3 to 5 judges. All the judges constituting a panel shall be conversant with the factors governing the quality of the product. The containers shall be opened and contents poured separately into white porcelain bowls. Each judge shall independently examine the contents from each of the containers and assign scores for different characteristics.

A-2.1.1 The judges shall consider the following characteristics:

- a) Colour,
- b) Taste and flavour, and
- c) Absence of defects.

A-2.2 System of Scoring — The variations within each factor are so described that the scores may be ascertained for each factor and expressed numerically. The relative importance of each factor has been expressed numerically on a scale of 100. Each judge shall give a score for the individual factors, by the method described in Table 2 and record his observations in the Score Sheet (*see* P 8).

A-2.2.1 The scores as number of points given by the judges for the contents of each container for the 3 factors shall be recorded in a tabular form in the Score Card (*see* P 9) and the average score calculated for each factor with overall average for each container entered in the appropriate column (*see* Table 2 and A-2.3.2).

A-2.3 Ascertaining the Score

A-2.3.1 Agreement Among Judges — To ascertain uniformity of judgement among the judges, the total score assigned by each of them for the contents of the same container shall be calculated by adding up the scores for the various individual characteristics. If the difference between the maximum and the minimum of the total score so obtained does not exceed

TABLE 2 SCORING FOR SYNTHETIC SYRUPS*(Clause A-2.2)*

CHARACTERISTIC	DESCRIPTION	MAXIMUM NUMBER OF POINTS
(1)	(2)	(3)
Colour	Good, bright, practically uniform colour; free from discolouration due to oxidation or other causes; changes normally associated due to processing shall not be considered as defects	25
	Good, bright, reasonably uniform colour	20
Taste and flavour	Pleasant taste; flavour characteristic of the flavouring material used; free from burnt or any other objectionable odour or off-taste	50
	Pleasant taste; slight flavour (aroma) indicating scorching or burning, but such as not to render the product unacceptable	40
Absence of defects	Clear; practically free from haziness, sediment, grit, dirt or other objectionable extraneous material; free from any crystallized sugar. There shall not be present an oily ring at the surface	25
	Reasonably clear; reasonably free from haziness, slight sedimentation; no oily ring present at the surface	20

($K + 5$), where K is the number of judges, the scoring shall be deemed as uniform for the container under consideration. If the difference exceeds ($K + 5$), the most outlying score, that is, the one which is farthest from its immediate neighbour (the scores being arranged in one order), shall be discarded and the uniformity among the scores of remaining judges examined.

A-2.3.2 When the consistency (*see A-2.3.1*) is thus established the overall average scores given by the judges whose scoring has been found to be consistent, shall be calculated for each container. The average score for each of the individual characteristic shall also be calculated by taking into account the corresponding score as given by the same judge for the contents of the same container.

Sample No.....

Date of Sampling.....

DETAILS OF THE SAMPLE:

a) Product.....	b) Name of Manufacturer.....
-----------------	------------------------------

c) Batch No.....

[illegible]

Signature of the Judge.....

Date.....

Sample No.

Date of Sampling.....

**DETAILS OF THE SAMPLE
CONTAINER:**

a) Product.....	b) Name of Manufacturer.....
-----------------	------------------------------

c) Batch No.

[illegible]

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Conversion
Force	newton	N	1 N = 0.101 972 kgf
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

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